I. Complete the following chart by correctly supplying the prefixes and its symbol for each space.

<table>
<thead>
<tr>
<th>Small</th>
<th>Big</th>
</tr>
</thead>
<tbody>
<tr>
<td>deci (d)</td>
<td>10</td>
</tr>
<tr>
<td>centi (c)</td>
<td>100</td>
</tr>
<tr>
<td>milli (m)</td>
<td>1000</td>
</tr>
<tr>
<td>micro (µ)</td>
<td>1000000</td>
</tr>
<tr>
<td>nano (n)</td>
<td>1000000000</td>
</tr>
</tbody>
</table>

II. Use the above completed chart to convert the following examples to the new unit:

1) 895 cm → m
   \[
   895 \text{ cm} \times \frac{1 \text{ m}}{100 \text{ cm}} = 8.95 \text{ m}
   \]

2) 1.02 dag → g
   \[
   1.02 \text{ dag} \times \frac{10 \text{ g}}{1 \text{ dag}} = 10.2 \text{ g}
   \]

3) 0.0950 L → mL
   \[
   0.0950 \text{ L} \times \frac{1000 \text{ mL}}{1 \text{ L}} = 95 \text{ mL}
   \]

4) 32 GB → B
   \[
   32 \text{ GB} \times \frac{1 \text{ B}}{1 \text{ GB}} = 32,000,000,000 \text{ B}
   \]

5) 80200 Mg → dg
   \[
   80200 \text{ Mg} \times \frac{1000000 \text{ g}}{1 \text{ Mg}} = 8.02 \times 10^6 \text{ g}
   \]

6) 60 nm → mm
   \[
   60 \text{ nm} \times \frac{1 \text{ m}}{1000000000 \text{ nm}} = 0.00000060 \text{ m}
   \]

7) 253 kL → daL
   \[
   253 \text{ kL} \times \frac{1000 \text{ L}}{1 \text{ kL}} = 253000 \text{ L} \times \frac{1 \text{ daL}}{10 \text{ L}} = 25300 \text{ daL}
   \]
III. Supply the following formulas
   a. Density \[ D = \frac{m}{V} \]
   b. Percentage Error \[ \frac{\text{Accepted} - \text{Experimental}}{\text{Accepted}} \times 100 \]

IV. Solve the following problems
1) What is the density of a material if it has a mass of 702.9 g and a volume of 459.11 mL?
   \[ D = \frac{702.9}{459.11} = 1.53 \frac{g}{mL} \]
2) What is the mass of a material if it has a density of 1.25 g/mL and a volume of 162.2 mL?
   \[ 1.25 \times \frac{x}{162.2} = \frac{202.8}{g} \]
3) What is the volume of a material if it has a density of 0.989 g/mL and a mass of 520.2 g?
   \[ 0.989 \times \frac{520.2}{x} = \frac{535}{mL} \]
4) The density of an unknown metal was determined to be 6.95 g/mL. The actual density was 7.98 g/mL. What is the percent error in this experiment?
   \[ \frac{7.98 - 6.95}{7.98} \times 100 = 12.9\% \]
5) The mass of a 102.9 g piece of aluminum was measured several times. The measured masses were 89.2 g, 88.9 g, 88.8 g, 89.3 g, and 89.0 g. Use the average of the measured masses to determine the percent error of this experiment. Is this accurate or precise? Neither or both?
   \[ \text{Average} = \frac{89.2 + 88.9 + 88.8 + 89.3 + 89.0}{5} = 89.04 \] \[ \text{Exp} = 89.04 \] \[ \frac{89.04 - 89.04}{89.04} \times 100 = 0.0\% \]

V. Answer the following questions concerning significant figures
   a. True or False: The numbers 1 through 9 are always significant.
   b. True or False: Zeros that are between two other significant figures are always significant.
   c. True or False: Placeholders are always significant.
   d. True or False: When multiplying or dividing with significant figures, the important thing to look at is how many decimal places each number has.

VI. When trying to determine if a zero at the beginning or the end of a number is significant, what two things need to be true? There is a decimal point, or there is a number in front of the zero (anywhere).

VII. How many significant figures are in the following numbers?
   a) \(0.0000000800\) \(\frac{7}{9}\), b) \(0.0000000800\) \(\frac{6}{3}\), c) \(0.0000000800\) \(\frac{4}{4}\)

VIII. Solve the following problems to the proper number of significant figures.
   a) \(203.0 + 89.189 = 292.189 = 292.2\) \(\text{f}g\)
   b) \(876.19 - 25.1919 = 850.9981 = 851.00\) \(\text{f}g\)
   c) \(0.02009 \times 410 = 8.2369 = 8.2\) \(\text{f}g\)
   d) \(10000/220.0 = 45.45 = 50\) \(\text{f}g\)